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DATE: November 15, 2004

PTO IDENTIFIER: Application Number 09/577,347-Conf. #5095
Patent Number

Inventor: Maria Ronay

MESSAGE TO: US Patent and Trademark Office

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FROM: CONNOLLY BOVE LODGE & HUTZ LLP

Burton A. Amernick

PHONE: (202) 331-7111

Attorney Dkt. #: 20140-00247-US

PAGES (Including Cover Sheet): 17

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CONNOLLY BOVE LODGE & HUTZ LLP
1990 M Street, N.W., Suite 800, Washington, DC 20036-3425
Telephone: (202) 331-7111 Facsimile: (202) 293-6229

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		Application Number	09/577,347-Conf. #5095
		Filing Date	May 24, 2000
		First Named Inventor	Maria Ronay
		Art Unit	1765
		Examiner Name	SONG, Matthew J.
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ENCLOSURES (Check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please Identify below): Claim Appendix
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	CONNOLLY BOVE LODGE & HUTZ LLP		
Signature			
Printed name	Burton A. Amernick		
Date	11-12-04	Reg. No.	24,852

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Docket No.: YOR920000109US1
(20140-00247-US)
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of:
Maria Ronay

Application No.: 09/577,347

Group Art Unit: 1765

Filed: May 24, 2000

Examiner: SONG, Matthew J.

For: **SELECTIVE POLISHING WITH SLURRIES
CONTAINING POLYELECTROLYTES**

APPELLANT'S BRIEF UNDER 37 C.F.R § 41.37

Attention: Board of Patent Appeals and Interferences
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is an appeal from the Primary Examiner's final rejection of claims 13-36.

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is the assignee of the application, International Business Machines Corporation

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant, Appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-36 are in the application. Claims 13-36 are finally rejected and are on appeal. Claims 2-12 have been cancelled. Claim 1 is directed to a non-elected invention and has been withdrawn.

IV. STATUS OF AMENDMENTS

No amendment to the claims was filed after the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention provides for increasing the polishing ratio of silicon dioxide to silicon nitride by including an anionic polyelectrolyte in the polishing slurry (see page 3, lines 8-9). Another aspect of the present invention provides for increasing the ratio of a metal to silicon dioxide, silicon nitride, and/or silicon oxynitride by including a cationic polyelectrolyte in the polishing slurry (see page 3, lines 10-12). According to the present invention, as discussed in the paragraph bridging pages 4 and 5 of the specification, in order to achieve increased selectivity of polishing, the quantity of polyelectrolytes in the abrasive composition is in excess of the amount which absorbs on the surface of the abrasive particles and therefore is present in some extent in the composition as free or unabsorbed polyelectrolytes (e.g. independent claims 13 and 18 recite that the polyelectrolyte is "in an amount sufficient to increase the polishing rate ratio of the --- to ---"). It is believed that the portion of the polyelectrolyte in the supernatant portion of the slurry controls the polishing rate selectivity (see page 5, lines 5-6).

More particularly, claim 13 and claims dependent thereon recite employing an anionic polyelectrolyte for increasing the polishing rate ratio of silicon dioxide to silicon nitride (see page 1, lines 11-12). The anionic polyelectrolyte is employed in an amount sufficient to increase

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the polishing rate ratio of silicon dioxide to silicon nitride (see page 3, lines 18 and 19). Claim 18 recites employing a cationic polyelectrolyte for increasing the polishing ratio of metal to silicon dioxide, silicon nitride and/or silicon oxynitride (see page 1, lines 12-13). The cationic polyelectrolyte is present in an amount sufficient to increase the polishing rate ratio of the metal to silicon dioxide, silicon nitride and/or silicon oxynitride (see page 4, lines 4-5).

VI. ISSUES TO BE REVIEWED ON APPEAL

- A. Has the Examiner established that claims 13-36 are obvious and therefore unpatentable under 35 USC 103 over the cited art and namely over applicant's admissions of prior art in view of U.S. Patent 5,876,490 to Ronay (inventor of this application)?
- B. Has the Examiner established that claims 13-17, 22-27 and 30-36 are obvious and therefore unpatentable under 35 USC 103 over the cited art and namely over U.S. Patent 5,801,082 to Tseng in view of U.S. Patent 5,876,490 to Ronay?
- C. Has the Examiner established that claims 18-21 and 28-29 are obvious and therefore unpatentable under 35 USC 103 over the cited art and namely over U.S. Patent 5,814,236 to Booth, in view of U.S. Patent 5,896,490 to Ronay?

VII. ARGUMENTS

- A. The prior art admitted in the specification along with Ronay fail to render obvious Claims 13-36.

Claims 13-36 were rejected under 35 USC 103(a) as being unpatentable over applicant's admissions of prior art in view of U.S. Patent 5,876,490 to Ronay (inventor of this application). The cited references fail to render obvious Claims 13-36.

The present invention according to one embodiment provides for increasing the polishing ratio of silicon dioxide to silicon nitride by including an anionic polyelectrolyte in the polishing slurry. In another embodiment, the present invention provides for increasing the ratio of a metal to silicon dioxide, silicon nitride, and/or silicon oxynitride by including a cationic polyelectrolyte in the polishing slurry. According to the present invention, as discussed in the paragraph bridging pages 4 and 5 of the specification, in order to achieve increased selectivity of polishing, the quantity of polyelectrolytes in the abrasive composition is in excess of the amount which absorbs on the surface of the abrasive particles and therefore is present in some extent in the composition as free or unabsorbed polyelectrolytes. It is believed that the portion of the polyelectrolyte in the supernatant portion of the slurry controls the polishing rate selectivity.

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The "prior art admissions" relied upon by the examiner fail to render obvious the present invention since, among other things, as appreciated by the examiner these "prior art admissions" do not disclose the slurry compositions employed according to the present invention. Moreover, these "prior art admissions" do not suggest how to achieve increased polishing rate ratios that are obtainable according to the present invention.

More particularly, claim 13 and claims dependent thereon recite employing an anionic polyelectrolyte for increasing the polishing rate ratio of silicon dioxide to silicon nitride and claim 18 and claims dependent recite employing a cationic polyelectrolyte for increasing the polishing rate ratio of metal to silicon dioxide, silicon nitride and/or silicon oxynitride.

Ronay fails to overcome the above discussed deficiencies of the "prior art admissions" with respect to rendering obvious the present invention. Ronay does not disclose that use of the slurry compositions therein could or should be used in a polishing process to enhance the polishing rate ratio of silicon dioxide to silicon nitride or the polishing rate ratio of metal to silicon dioxide, silicon nitride and/or silicon oxynitride depending upon the type of polyelectrolyte employed.

Ronay does not disclose the use of the slurry compositions therein that contain an anionic polyelectrolyte could or should be used in a polishing process to enhance the polishing rate ratio of silicon dioxide to silicon nitride. Also, Ronay does not disclose the use of the slurry compositions therein that contain a cationic polyelectrolyte could or should be used in a polishing process to enhance the polishing rate ratio of metal to silicon dioxide, silicon nitride and/or silicon oxynitride. The disclosure of Ronay does not discuss this polishing selectivity. Accordingly, persons skilled in the art faced with the problems addressed by the present invention would not be lead by Ronay on how to solve the selectivity problem. Furthermore, since achieving the results obtainable by the present invention is extremely significant, if such were obvious it seems apparent that that such would have been disclosed by Ronay.

More particularly, compositions of U.S. Patent 5,876,490 are intended for planarizing microelectronics structures by having a fraction of the abrasive particles coated with a polyelectrolyte, which do not polish, while the rest of the particles remain uncoated and do polish (the coated particles segregate in the "down" areas (valleys), thereby preventing polishing there, while the uncoated particles polish the "up" areas (hills), thereby enhancing planarization). Therefore, employing excess polyelectrolyte would be contrary to these objectives. Concerning

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this argument, the examiner has taken the position that the claims do not recite employing excess polyelectrolyte. The examiner is in error since the claims at least implicitly include this feature since the claims recite that the polyelectrolyte is present in an amount sufficient to increase the recited polishing rate ratio. It is entirely proper to recite amounts of components by use of functional language and that such must be taken into account when interpreting the claims.

According to U.S. Patent 5,876,490, the charge of the polyelectrolyte is opposite to the charge of the abrasive particles. On the other hand, in the present invention, as discussed above, the charge of the polyelectrolyte is selected based upon the substrate to be polished. By way of example, adding poly(acrylic acid) to a silica slurry (silica is negatively charged), the poly(acrylic acid) would not adsorb onto the abrasive particles and thus would not improve the planarization; whereas, it will achieve selective polishing of silicon dioxide as compared to silicon nitride.

U.S. Patent 5,876,490 does not suggest selecting the type of polyelectrolyte depending upon the desired polishing selectivity as recited in independent claims 13 and 18.

B. U.S. Patent 5,801,082 to Tseng along with Ronay fail to render obvious claims 13-17, 22-27 and 30-36

Claims 13-17, 22-27 and 30-36 were rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 5,801,082 to Tseng in view of U.S. Patent 5,876,490 to Ronay. The cited references fail to render obvious claims 13-17, 22-27 and 30-36.

Tseng fails to render obvious the present invention since, among other things, as appreciated by the examiner, Tseng does not disclose the slurry compositions employed according to the present invention. Moreover, Tseng fails to suggest any means whatsoever for achieving increased polishing rate ratios that are obtainable according to the present invention. Tseng does not even remotely discuss improved polishing rate ratios. Tseng merely mentions chemical-mechanical polishing as one of the steps in his process for making shallow trench isolation regions.

Ronay fails to overcome the above discussed deficiencies of Tseng with respect to rendering obvious the present invention. As discussed above, Ronay does not disclose that use of the slurry compositions therein that contain an anionic polyelectrolyte could or should be used in a polishing process to enhance the polishing rate ratio of silicon dioxide to silicon nitride. Also,

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as discussed above, Ronay does not disclose the use of the slurry compositions therein that contain an anionic polyelectrolyte could or should be used in a polishing process to enhance the polishing rate ratio of silicon dioxide to silicon nitride. Also, as discussed above, Ronay does not disclose the use of the slurry compositions therein that contain a cationic polyelectrolyte could or should be used in a polishing process to enhance the polishing rate ratio of metal to silicon dioxide, silicon nitride and/or silicon oxynitride. The disclosure of Ronay does not discuss this polishing selectivity. Accordingly, persons skilled in the art faced with the problems addressed by the present invention would not be lead by Ronay on how to solve the selectivity problem. Furthermore, since achieving the results obtainable by the present invention is extremely significant, if such were obvious it seems apparent that that such would have been disclosed by Ronay.

Also, as discussed above, compositions of U.S. Patent 5,876,490 are intended for planarizing microelectronics structures by having a fraction of the abrasive particles coated with a polyelectrolyte, which do not polish, while the rest of the particles remain uncoated and do polish (the coated particles segregate in the "down" areas (valleys), thereby preventing polishing there, while the uncoated particles polish the "up" areas (hills), thereby enhancing planarization). Therefore, employing excess polyelectrolyte would be contrary to these objectives. Concerning this argument, the examiner has taken the position that the claims do not recite employing excess polyelectrolyte. The examiner is in error since the claims at least implicitly include this feature since the claims recite that the polyelectrolyte is present in an amount sufficient to increase the recited polishing rate ratio. It is entirely proper to recite amounts of components by use of functional language and that such must be taken into account when interpreting the claims.

According to U.S. Patent 5,876,490, the charge of the polyelectrolyte is opposite to the charge of the abrasive particles. On the other hand, in the present invention, as discussed above, the charge of the polyelectrolyte is selected based upon the substrate to be polished. By way of example, adding poly(acrylic acid) to a silica slurry (silica is negatively charged), the poly(acrylic acid) would not adsorb onto the abrasive particles and thus would not improve the planarization; whereas, it will achieve selective polishing of silicon dioxide as compared to silicon nitride.

Moreover, U.S. Patent 5,876,490 does not suggest selecting the type of polyelectrolyte depending upon the desired polishing selectivity as recited in claim 13.

C. U.S. Patent 5,814,236 to Booth along with Ronay fail to render obvious claims 18-21 and 28-29.

Claims 18-21 and 28-29 were rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 5,814,236 to Booth, in view of U.S. Patent 5,896,490 to Ronay. The cited references fail to render obvious claims 18-21 and 28-29.

Booth fails to render obvious the present invention since, among other things, as appreciated by the examiner, Booth does not disclose the slurry compositions employed according to the present invention. Moreover, Booth fails to suggest any means whatsoever for achieving increased polishing rate ratios that are obtainable according to the present invention. Booth does not even remotely discuss improved polishing rate ratios. Booth merely mentions chemical-mechanical polishing as one of the steps in his process for forming a spatial light modulator.

Ronay fails to overcome the above discussed deficiencies of Booth with respect to rendering obvious the present invention. As discussed above, Ronay does not disclose that use of the slurry compositions therein that contain a cationic polyelectrolyte could or should be used in a polishing process to enhance the polishing rate ratio of metal to silicon dioxide, silicon nitride and/or silicon oxynitride. Also, as discussed above, Ronay does not disclose the use of the slurry compositions therein that contain a cationic polyelectrolyte could or should be used in a polishing process to enhance the polishing rate ratio of metal to silicon dioxide, silicon nitride and/or silicon oxynitride. The disclosure of Ronay does not discuss this polishing selectivity. Accordingly, persons skilled in the art faced with the problems addressed by the present invention would not be lead by Ronay on how to solve the selectivity problem. Furthermore, since achieving the results obtainable by the present invention is extremely significant, if such were obvious it seems apparent that that such would have been disclosed by Ronay.

More particularly, compositions of U.S. Patent 5,876,490 are intended for planarizing microelectronics structures by having a fraction of the abrasive particles coated with a polyelectrolyte, which do not polish, while the rest of the particles remain uncoated and do polish (the coated particles segregate in the "down" areas (valleys), thereby preventing polishing there, while the uncoated particles polish the "up" areas (hills), thereby enhancing planarization). Therefore, employing excess polyelectrolyte would be contrary to these objectives. Concerning this argument, the examiner has taken the position that the claims do not recite employing excess

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polyelectrolyte. The examiner is in error since the claims at least implicitly include this feature since the claims recite that the polyelectrolyte is present in an amount sufficient to increase the recited polishing rate ratio. It is entirely proper to recite amounts of components by use of functional language and that such must be taken into account when interpreting the claims.

According to U.S. Patent 5,876,490, the charge of the polyelectrolyte is opposite to the charge of the abrasive particles. On the other hand, in the present invention, as discussed above, the charge of the polyelectrolyte is selected based upon the substrate to be polished. By way of example, adding poly(acrylic acid) to a silica slurry (silica is negatively charged), the poly(acrylic acid) would not adsorb onto the abrasive particles and thus would not improve the planarization; whereas, it will achieve selective polishing of silicon dioxide as compared to silicon nitride.

Moreover, U.S. Patent 5,876,490 does not suggest selecting the type of polyelectrolyte depending upon the desired polishing selectivity as recited in claim 18.

Case law concerning 35 USC 103

Concerning obviousness, *Graham V. John Deere*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966) outlines the approach that must be taken when determining whether an invention is obvious. In *Graham*, the Court stated that a patent may not be obtained if the subject matter would have been obvious at the time the invention was made to a person having ordinary skill in the art, but emphasized that nonobviousness must be determined in the light of inquiry, not quality. Approached in this light, §103 permits, when followed realistically, a more practical test of patentability. In accordance with *Graham*, three inquiries must be made in determining whether an invention is obvious:

- (1) The scope and content of the prior art are to be determined.
- (2) The difference between the prior art and the claims at issue are to be ascertained.
- (3) The level of ordinary skill in the pertinent art resolved.

Against this background, the obviousness or nonobviousness of the subject matter is determined. Secondary considerations, such as commercial success, long felt but unsolved needs, failure of others, etc., can be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

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In conjunction with interpreting 35 U.S.C. §103 under *Graham*, the initial burden is on the Examiner to provide some suggestion of the desirability of doing what the inventor did, i.e. the Examiner must establish a *prima facie* case of obviousness. To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention, or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

To establish a *prima facie* case of obviousness, three basic criteria must be met:

1. There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference.
2. There must be a reasonable expectation of success.
3. The prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion the reasonable expectation of success must both be found in the prior art and not based on Applicants' disclosure. *In re Vaeck*, 947 F2d 488, 20 U.S.P.Q. 2d 1438 (Fed. Cir. 1991). See MPEP § 2143-§2143.03 for decisions pertinent to each of these criteria.

The discussion in *In re Kotzab*, 55 U.S.P.Q. 2d 1313 (Fed. Cir. 2000) at page 1317 is also relevant wherein the Court stated:

A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided by the prior art references and the then-accepted wisdom in the field. See *Dembiczak*, 175 F.3d at 990, 50 USPQ2d at 1617. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.¹ Id. (quoting W.L. Gore & Assoc., Inc. v. Garlock, Inc. 721 F.2d 1540, 1553, 220 USPQ 303,313 (Fed. Cir. 1983).

e this issue.

The mere fact that the cited art may be modified in the manner suggested by the Examiner does not make this modification obvious, unless the cited art suggest the desirability of the modification. No such suggestion appears in the cited art in this matter. The Board's

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attention in kindly directed to *In re Lee* 61 USPQ2d 1430 (Fed. Cir. 2002), *In re Dembicza et al.* 50 USPQ2d. 1614 (Fed. Cir. 1999), *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984), *In re Laskowski*, 10 USPQ2d. 1397 (Fed. Cir. 1989) and *In re Fritch*, 23, USPQ2d. 1780 (Fed. Cir. 1992).

In Dembicza et al., supra, the Court at 1617 stated: "Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., C.R. Bard, Inc., v. M3 Sys., Inc., 157 F.3d. 1340, 1352, 48 USPQ2d. 1225, 1232 (Fed. Cir. 1998) (describing 'teaching or suggestion motivation [to combine]' as in 'essential evidentiary component of an obviousness holding'), In re Rouffet, 149 F.3d 1350, 1359, 47 USPQ2d. 1453, 1459 (Fed. Cir. 1998) ('the Board must identify specifically...the reasons one of ordinary skill in the art would have been motivated to select the references and combine them');...".

Also, the cited art lacks the necessary direction or incentive to those or ordinary skill in the art to render a rejection under 35 USC 103 sustainable. The cited art fails to provide the degree of predictability of success of achieving the properties attainable by the present invention needed to sustain a rejection under 35 USC 103. See *Diversitech Corp. v. Century Steps, Inc.* 7 USPQ2d 1315 (Fed. Cir. 1988), *In re Mercier*, 187 USPQ 774 (CCPA 1975) and *In re Naylor*, 152 USPQ 106 (CCPA 1966).

Moreover, the properties of the subject matter and improvements which are inherent in the claimed subject matter and disclosed in the specification are to be considered when evaluating the question of obviousness under 35 USC 103. See *Gillette Co. v. S.C. Johnson & Son, Inc.*, 16 USPQ2d. 1923 (Fed. Cir. 1990), *In re Antonie*, 195 USPQ 6 (CCPA 1977), *In re Estes*, 164 USPQ (CCPA 1970), and *In re Papesch*, 137 USPQ 43 (CCPA 1963).

No result or property can be ignored in determining patentability and comparing the claimed invention to the cited art. Along these lines, see *In re Papesch*, supra, *In re Burt et al.*, 148 USPQ 548 (CCPA 1966), *In re Ward*, 141 USPQ 227 (CCPA 1964), and *In re Cescon*, 177 USPQ 264 (CCPA 1973).

The present invention could only be derived from the cited art by the use of "hindsight", i.e. by knowing what Applicants' invention was in advance from Applicants' disclosure, and then *ex post facto* reconstructing Applicants' invention from the prior art after a thorough search.

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The prior art does not lead persons of ordinary skill in the art to discover a process for enhancing polishing rate ratio of silicon dioxide to silicon nitride or of metal to silicon dioxide, silicon nitride and/or silicon oxynitride. It is impermissible under 35 U.S.C. 103 to use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. See *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Furthermore, it is well settled that hindsight reconstruction using the patent application as a guide through the maze of prior art references, combining "the right references in the right way" so as to achieve the result of the claimed invention must be avoided. See *Grain Processing Corp. v. American Maize-Products Corp.*, 5 U.S.P.Q.2d 1788 (Fed. Cir. 1988).

The comments made by the Court in *AIR-vend, Inc. Throne Industries, Inc.*, 229 USPQ 505 at 515 (District Court, Minnesota, 1985) are appropriate here:

The question of obviousness, as the Court of Appeals for the Federal Circuit has acknowledged, is simple to ask, but difficult to answer... The difficulty in answering this question is due in no small part to the strong temptation to resort to and rely on hindsight in formulating the answer. Hindsight, however, is quite improper when resolving the question of obviousness. To use the patent in suit as a guide through the prior art references, combining the right references in the right way to arrive at the result of the claims in the suit is, therefore, also quite improper. Combining the teachings of the prior art to produce the claimed invention absent some teaching, suggestion or incentive supporting this combination cannot establish obviousness.

The rejection of the claims is in the nature of "ought to be tried" which is an impermissible standard under 35 U.S.C. 103. See *Jones v. Hardy*, 220 U.S.P.Q. 1021 (Fed. Cir. 1984).

To the extent the examiner is relying upon inherency to support the above rejections, such is improper. Inherency requires that the recited results or structure must necessarily be obtained not merely that it might be achieved. See *Transclean Corp. v. Bridgewood Services Inc.* 62 USPQ2d 1917 (Fed. Cir. 2002), *Electra Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 32 USPQ2d 1017 (Fed. Cir. 1994); *In re Oelrich*, 212 USPQ 323 (CCPA 1981) and *In re Robertson*, 49 USPQ2d 1949 (Fed. Cir. 1999).

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Conclusion

In view of the above, it is abundantly clear that the Primary Examiner erred in finally rejecting claims 13-36. Therefore, it is respectfully requested that the Board reverse the Examiner and allow claims 13-36.

In the event the Examiner deems necessary any further cooperation to further the prosecution of this application, Appellant urges the Examiner to contact the undersigned.

Appellant believes no fee is due with this brief. However, if a fee is due, please charge our Deposit Account No. 50-0510, under Order No. 20140-00247-US1 from which the undersigned is authorized to draw.

Dated: 11-15-04

Respectfully submitted,

By 
Burton A. Amernick

Registration No.: 24,852
CONNOLLY BOVE LODGE & HUTZ LLP
1990 M Street, N.W., Suite 800
Washington, DC 20036-3425
(202) 331-7111
(202) 293-6229 (Fax)
Attorneys for Appellant

VIII.

CLAIMS APPENDIX

13. A method for polishing a silicon dioxide surface in contact with a silicon nitride which comprises providing on the silicon dioxide surface a slurry comprising abrasive particles and an anionic polyelectrolyte in an amount sufficient to increase the polishing rate ratio of the silicon dioxide to the silicon nitride and contact said surface with a polishing pad.

14. The method of claim 13 wherein the polyelectrolyte has a molecular weight of less than about 100,000.

15. The method of claim 13 wherein the polyelectrolyte is selected from the groups consisting of poly (acrylic acid), poly (methacrylic acid), poly (methyl methacrylic acid), poly (maleic acid), and poly (vinylsulfonic acid).

16. The method of claim 13 wherein the polyelectrolyte is poly (acrylic acid).

17. The method of claim 13 wherein the amount of the abrasive particles is about 0.1 to about 20 percent by weight.

18. A method for polishing a metal surface which is in contact with at least one member elected from the group consisting of silicon dioxide, silicon nitride and silicon oxynitride which method comprises providing on the metal surface a slurry comprising abrasive particles and a cationic polyelectrolyte in an amount sufficient to increase the polishing rate ratio of the metal to said member and contacting said surface with a polishing pad.

19. The method of claim 18 wherein the polyelectrolyte is selected from the group consisting of poly (vinylamine), poly (ethylenimine), and poly (4-vinylpyridine).

20. The method of claim 18 wherein the polyelectrolyte is polyethylenimine.

21. The method of claim 18 wherein the metal is W, Cu or Al.

22. The method of claim 13 wherein the polyelectrolyte has a molecular weight of about 300 to about 20,000.

23. The method of claim 13 wherein the abrasive particles comprise a member selected from the group consisting of ceria, alumina, silica and zirconia.

24. The method of claim 13 wherein the amount of abrasive particles is about 0.3 to about 2 percent by weight.

25. The method of claim 13 wherein the amount of said polyelectrolyte is about 0.05 percent by weight.

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26. The method of claim 13 wherein the amount of said polyelectrolyte is about 0.05 to about 5 percent by weight.

27. The method of claim 13 wherein the amount of polyelectrolyte is about 0.3 to about 1 percent by weight.

28. The method of claim 18 wherein the polyelectrolyte has a weight of less than about 100,000.

29. The method of claim 18 wherein the polyelectrolyte has a molecular weight of about 300 to about 20,000.

30. The method of claim 23 wherein the abrasive particles comprise a member selected from the group consisting of ceria, alumina, silica and zirconia.

31. The method of claim 24 wherein the amount of abrasive particles is about 0.3 to about 2 percent by weight.

32. The method of claim 25 wherein the amount of said polyelectrolyte is about 0.05 percent by weight.

33. The method of claim 26 wherein the amount of said polyelectrolyte is about 0.05 to about 5 percent by weight.

34. The method of claim 27 wherein the amount of polyelectrolyte is about 0.3 to about 1 percent by weight.

35. The method of claim 13 wherein the slurry is an aqueous slurry.

36. The method of claim 23 wherein the slurry is an aqueous slurry.